TDH220 2E20T660

FIG.1a PRIOR ART

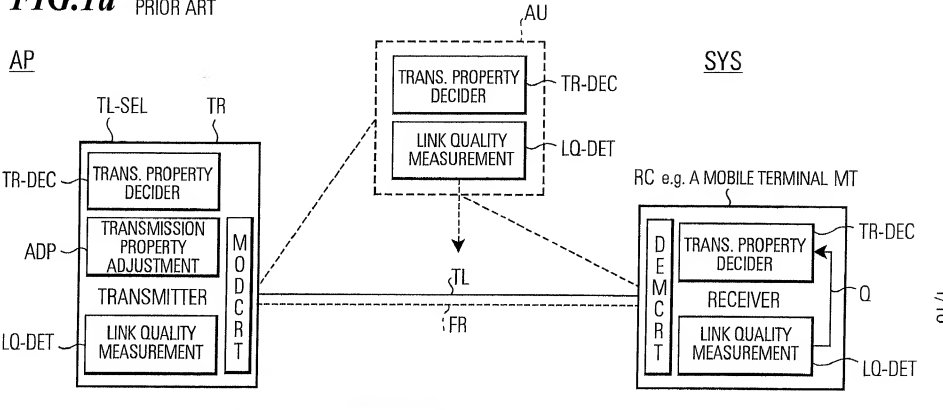

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FIG.2a

PRIOR ART

MODE	MODULATION	CODE RATE	PHYSICALLAYER BIT RATE
1	BPSK	1/2	6 Mbps
2	BPSK	3/4	9 Mbps
3	QPSK	1/2	12 Mbps
4	QPSK	3/4	18 Mbps
5	16 QAM	9/16	27 Mbps
6	16 QAM	3/4	36 Mbps
7	64 QAM	3/4	54 Mbps

FIG.2b

PRIOR ART

PARAMETER	SYMBOL	VALUE IN HIPERLAN/2
CARRIER FREQUENCY		5.2-5.8 GHz
CHANNEL FREQUENCY SPACING		20 MHz
SAMPLING RATE AFTER 64-POINT IFFT	1/T	20 MHz (= 1/(50ns))
FFT LENGTH		64
NUMBER OF USED SUBCARRIERS	N_{ST}	52
NUMBER OF DATA SUBCARRIERS	N_{SD}	48
NUMBER OF PILOT SUBCARRIERS	N_{SP}	4
LENGTH OF CYCLIC PREFIX		16 SAMPLES, EQ. TO 0.8μs
OFDM SYMBOL PERIOD INCL. CYCLIC PREFIX		4μs

FIG.1b

PRIOR ART

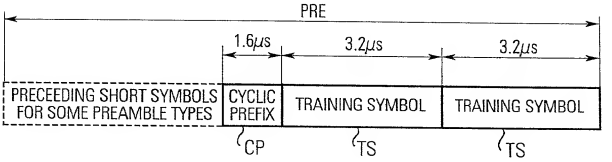
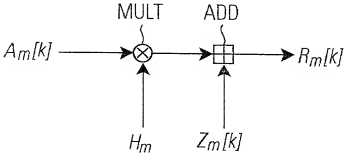


FIG.3

PRIOR ART



FOREIGN PATENT DOCUMENT

FIG.4a PRINCIPLE OF THE INVENTION

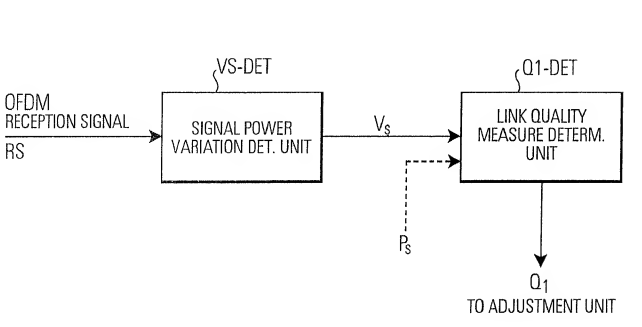
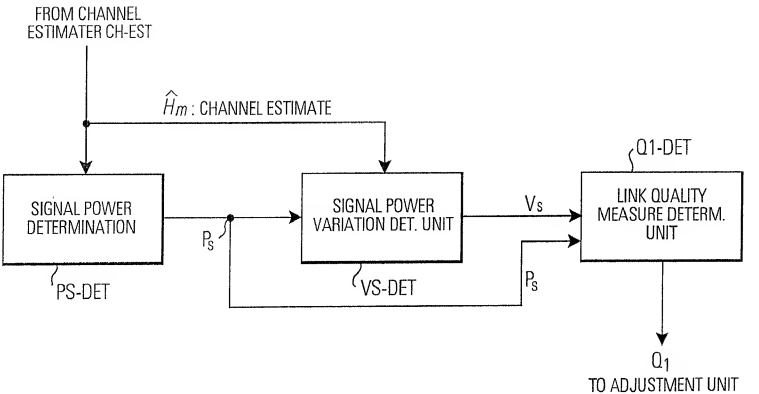
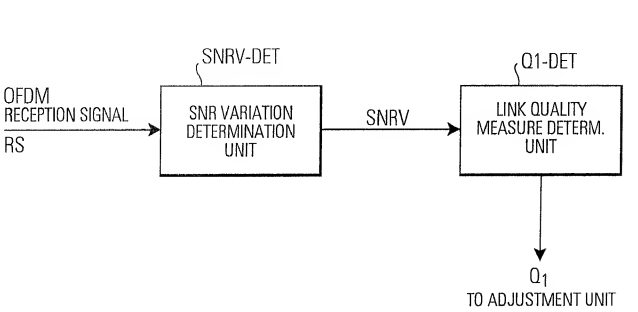


FIG.4b


FROM CHANNEL ESTIMATER CH-EST
$\hat{H}m$: CHANNEL ESTIMATE
SIGNAL POWER DETERMINATION
PS-DET
P_S
SIGNAL POWER VARIATION DET. UNIT
VS-DET
V_S
Q1-DET
LINK QUALITY MEASURE DETERM. UNIT
P_S
Q_1
TO ADJUSTMENT UNIT

099107232 .07240160

FIG.5a PRINCIPLE OF THE INVENTION



09910732 .072402

FIG.5b

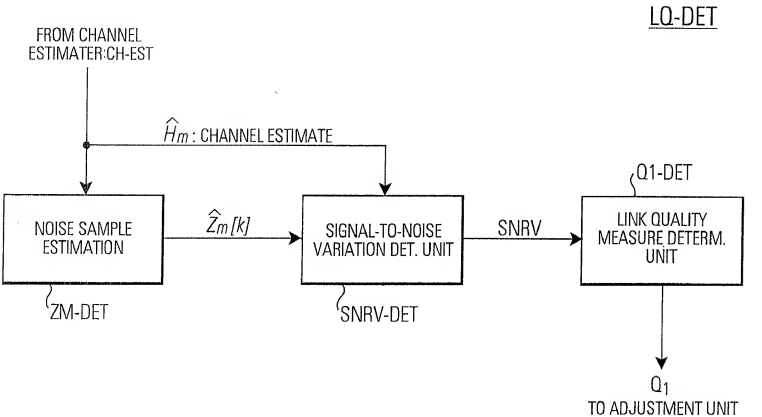


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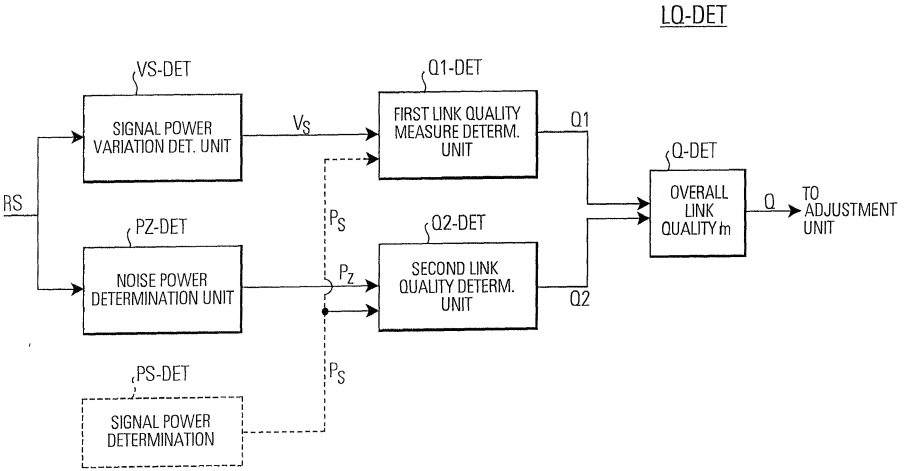
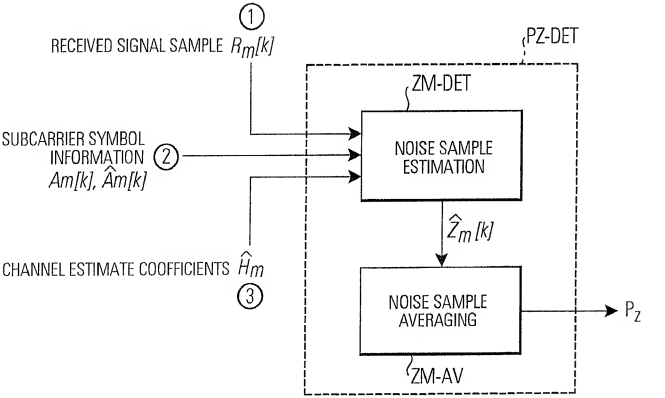
FIG.6



09910732 .072901

FIG.7



09910732 "07240

FIG.8

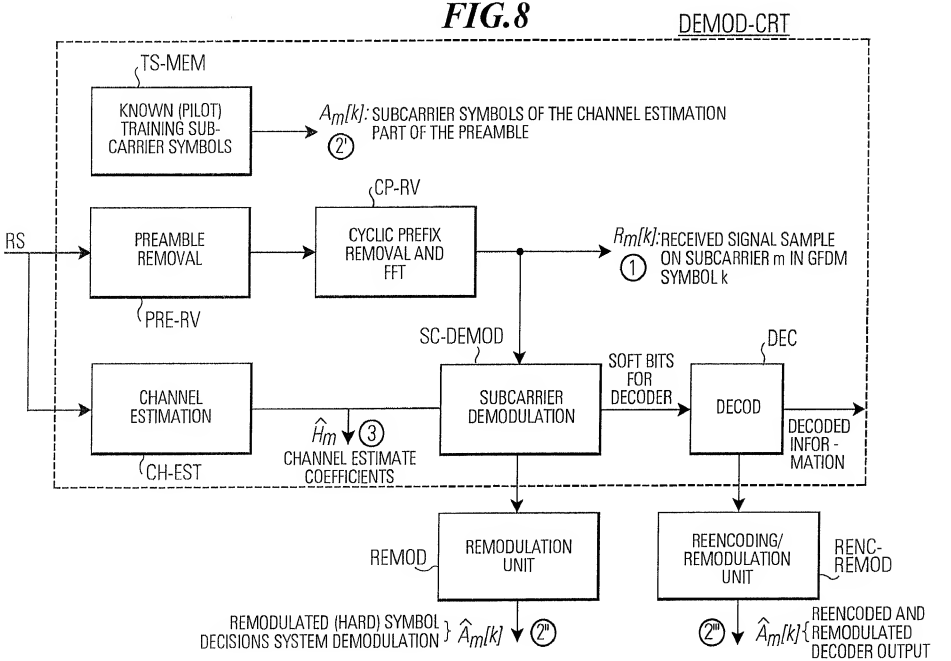


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FIG.9

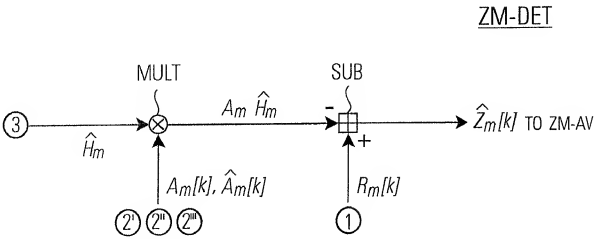

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FIG.10

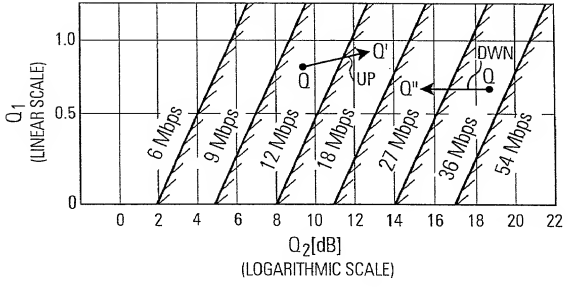


FIG.11

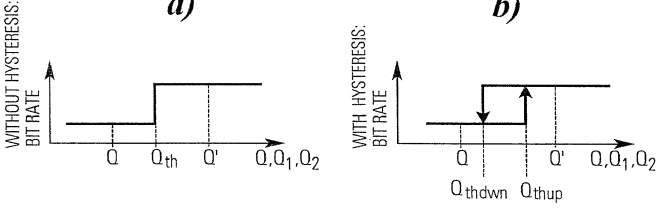


FIG.12

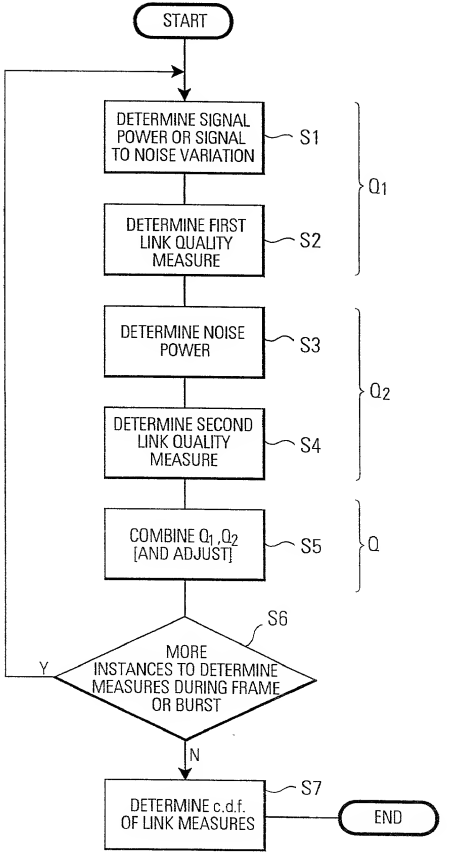

START
DETERMINE SIGNAL POWER OR SIGNAL TO NOISE VARIATION
S1
DETERMINE FIRST LINK QUALITY MEASURE
S2
Q1
DETERMINE NOISE POWER
S3
DETERMINE SECOND LINK QUALITY MEASURE
S4
Q2
COMBINE Q1 ,Q2 [AND ADJUST]
S5
Q
S6
MORE INSTANCES TO DETERMINE MEASURES DURING FRAME OR BURST
Y
N
DETERMINE c.d.f. OF LINK MEASURES
S7
END

FIG.13a

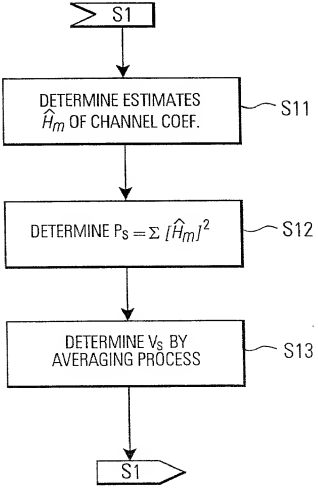

S1
DETERMINE ESTIMATES $\hat{H}_m$ OF CHANNEL COEF.
S11
DETERMINE $P_S = \Sigma [\hat{H}_m]^2$
S12
DETERMINE V_S BY AVERAGING PROCESS
S13
S1

FIG.13b

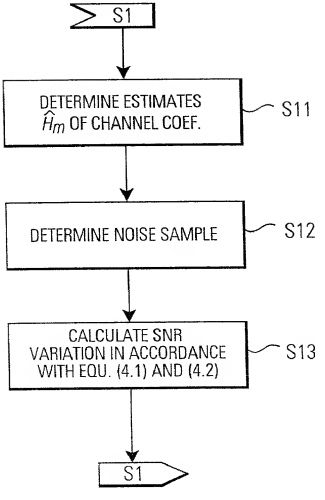
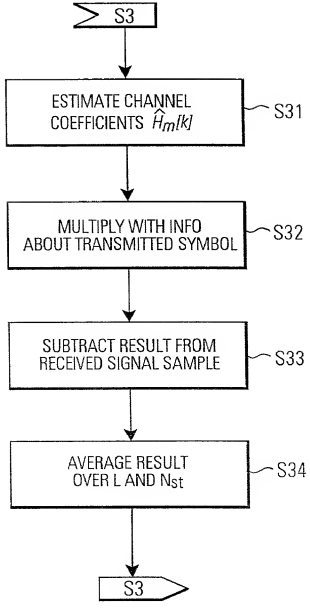

S1
DETERMINE ESTIMATES $\hat{H}_m$ OF CHANNEL COEF.
S11
DETERMINE NOISE SAMPLE
S12
CALCULATE SNR VARIATION IN ACCORDANCE WITH EQU. (4.1) AND (4.2)
S13
S1

FIG.13c


S3
ESTIMATE CHANNEL COEFFICIENTS $\hat{H}_m[k]$
S31
MULTIPLY WITH INFO ABOUT TRANSMITTED SYMBOL
S32
SUBTRACT RESULT FROM RECEIVED SIGNAL SAMPLE
S33
AVERAGE RESULT OVER L AND N_{st}
S34
S3